National Aeronautics and Space Administration
Goddard Space Flight Center

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ANNOUNCEMENT

SUBJECT: Goddard Space Flight Center's Drinking Water

On November 1, 2004, Announcement No. 05-16 was distributed to Greenbelt employees providing information on the Center's initiative to determine the quality of the drinking water. This was done after concerns were raised after articles were published in the Washington Post related to drinking water concerns in the Washington, D.C. area.

As stated in the previous announcement, the Safety and Environmental Division continues to test Greenbelt's drinking water. Results of a Centerwide study show that the drinking water supplied by the Washington Suburban Sanitary Commission (WSSC) is safe. It meets the Environmental Protection Agency (EPA) Safe Drinking Water Act requirements. The study did indicate that when water remains in the older plumbing systems overnight, it may allow small amounts of minerals (i.e., lead) from fittings and fixtures to leach into the water. Many Goddard buildings, other buildings in the metro area, and many of our homes potentially have this occurrence. Results for Buildings 1 and 21 Cafeterias and Building 90 (Child Care Center), were below the EPA action level for lead.

Typically, lead gets into your water after the water leaves your local treatment plant or your well. The source of lead is most likely pipes, fixtures or solder in the distribution system and buildings. The most common cause is corrosion, a reaction between the water and the pipes or solder. Dissolved oxygen, low pH (acidity) and low mineral content in water are common causes of corrosion. The water received from WSSC is corrosive or aggressive, increasing the leaching action. WSSC is adding orthophosphate to counter the leaching effects of aggressive water (orthophosphate is a commonly used corrosion inhibitor added to finished drinking water).

The Safety and Environmental Division conducted a risk assessment. The assessment concluded that a healthy 150 lb. person must consume 5.6 gallons of water daily at 94 ug/L lead level to be at an elevated risk; 1.3 gallons daily for a 130 lb. pregnant woman; and 0.9 gallons daily for a 45 lb. child. Given these results, the water supply does not pose a realistic health risk.

These daily quantities would have to be consumed every day for several years, from a source that has a lead content as high as the location with the highest concentration measured during the study. There is no allowance for the natural dilution of the lead in the water that occurs when the spigot is flushed. The daily quantity of water would need to be drawn from a source entirely at one time, typically early morning, before the water has been flushed through the system.

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EPA recommends the public take these actions at home: "Flush your pipes before drinking, and only use cold water for consumption. Anytime the water in a particular faucet has not been used for 6 hours or longer, flush your cold water pipes by running the water until it becomes as cold as it will get. (This could take as little as 5 to 30 seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take 2 minutes or longer.) The more time water has been sitting in your home's pipes, the more lead it may contain."

Based on the results of the study, the risk assessment, and EPA recommendations, employees concerned about lead in water should allow the water to run for a minimum of 1 minute early in the morning, or anytime that it has not been turned on for several hours, before using it for drinking or cooking. This recommendation should be applied at home as well.

In the near future, we will be posting signs at drinking water sources throughout the buildings (kitchen faucets and water fountains) to remind users to run the water that has been sitting overnight for a minimum of a minute before consumption. The sign will read as follows:

NOTICE
Run the overnight
water for a minimum
of 1 minute
before consumption

The following links contain information about lead in drinking water, its health effects, facts, and other helpful information from EPA and the Centers for Disease Control and Prevention:

http://www.epa.gov/safewater
http://www.cdc.gov/nceh/lead/spotLights/leadinwater.htm

For the sample results, visit Greenbelt's Environmental Program Management's Web site at http://environment.gsfc.nasa.gov/ (click on "Drinking Water Information" in lower left corner), or call Lixa Ramon at x6-4613.

Additional information and results of future studies will be posted as soon as they become available.

Original Signed By:
Armando M. Lopez, Jr.

Armando M. Lopez, Jr.
Chief, Safety & Environmental Division